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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,050	11/06/2000	Miyuki Enokida	B588-015	8306

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EXAMINER

LE, BRIAN Q

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/707,050

Applicant(s)

ENOKIDA ET AL.

Examiner

Brian Q Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/06/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14, 16-29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Lipson U.S. Patent No. 6,463,426.

Regarding claim 1, Lipson teaches an image search method of searching for a desired image from a plurality of images stored in storage means (abstract), comprising:

The setting step of setting a weight value in correspondence with a property of feature amount used in similarity calculation of the image (generate scores in similarity calculation) (FIG. 5);

The calculation step of calculating similarity between a designed search source image and each of the plurality of images (generates similarity score from comparing the query image with target images) on the basis of a feature amount of the designated search source image, a feature amount of each of the plurality of images, and the weight value set (similarity score) in the setting step (FIG. 7B, elements 162 and 164); and

The acquisition step of acquiring an image as a search result from the plurality of images on the basis of the image similarity calculated in the calculation step (FIG. 7B, elements 168 and 170).

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Referring to claim 2, Lipson teaches the method wherein the calculation step comprises performing similarity calculation (FIG. 11) in units of properties (column 2, lines 43-46) using the feature amount of the search source image and the feature amount of each of the plurality of images and integrating obtained results with the weight to obtain the similarity (column 3, lines 10-26).

For claim 3, Lipson discloses the method wherein said method further comprises the drawing step of allowing an operator to interactively draw an image, and the search source image is the image drawn in the drawing step (It is inherent that Microsoft Paint Package with the graphical user interface would allow the user to draw search source image so it can be searched in the database) (column 7, lines 22-26).

Regarding claim 4, Lipson further discloses the method wherein the setting step comprises setting the weight in units regions obtained by segmenting the image into a plurality of regions (FIG. 3, element 42).

For claim 5, Lipson also teaches the method wherein the calculation step comprises segmenting each of two images as processing targets into a plurality of segmented regions, performing similarity calculation in units of segmented regions using the feature amount, and integrating results obtained in units of regions (target region and surrounding regions) with the weight set in the setting step to obtain the similarity (FIG. 3, elements 46, 48 and 50).

To claim 6, Lipson teaches the method wherein the setting step comprises setting a high weight in a region at a central portion of the image (FIG. 3E and column 13, lines 24-61).

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For claim 7, Lipson teaches the method wherein the setting step comprises setting a high weight in a region arbitrarily designated in the search source image (FIG. 3F and column 13, lines 24-61).

Regarding claim 8, Lipson teaches the method further comprising the display step of displaying an image representing the image acquired in the acquisition step as the search result (FIG. 1, element 16).

For claim 9, Lipson teaches the method wherein the display step comprises displaying a thumbnail image of the image acquired in the acquisition step (FIG. 1A, element 20).

Referring to claim 10, Lipson further discloses the method wherein the display step comprises displaying an icon image corresponding the image acquired in the acquisition step (FIG. 1A).

Also for claim 11, Lipson also teaches the method wherein the display step comprises, when one of displayed images is selected, displaying details of an image linked to the image (FIG. 1A).

In addition to claim 12, Lipson discloses the method wherein the display step comprises displaying extracted images in an order of similarities (FIG. 1A).

Referring to claim 13, Lipson further teaches the method wherein the setting step comprises setting the weight in units of attributes of a color space (column 5, lines 33-38).

For claim 14, Lipson discloses the method wherein the setting step comprises setting different weights for feature amount representing luminance and a feature amount representing a color difference (column 5, lines 43-64).

For claims 16-29, please refer back to claims 1-14 respectively for the explanations.

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Regarding claim 30, please refer to claim 1 for the explanation. In addition, Lipson teaches a storage medium which stores a control program for causing a computer to realize processing of searching for a desired image from a plurality of images stored in storage means (FIG. 1, FIG. 2; column 7, lines 37-45 and column 8, lines 4-8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipson U.S. Patent No. 6,463,426.

Regarding claim 15, as discussed in claim 14 and claim 5, Lipson teaches the calculation step comprises executing similarity calculation using feature amounts corresponding to various color spaces and integrating obtained results with the weights to obtain the similarity (column 5, lines 43-64 and FIG. 3, elements 46, 48, and 50). Lipson does not teach the usage of YcbCr color space in the calculation. However, it would have been obvious for one skilled in the art to use YcbCr instead of other color spaces (RGB, CMYK, Lab, YUV, HSB and other) in the calculation to integrate obtained the similarity results.

For claim 30, please refer back to claim 15 for the explanation.

CONCLUSION

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to image searching:

U.S. Pat. No. 6,564,206 to Ikeda, teaches information search apparatus.

U.S. Pat. No. 6,445,818 to Kim, teaches a method automatically determining an optimal content image search algorithm by choosing the algorithm based on color.

U.S. Pat. No. 6,522,782 to Pass, teaches image and text searching techniques.

U.S. Pat. No. 6,621,926 to Yoon, teaches image retrieval system and method using image histogram.

U.S. Pat. No. 6,628,824 to Belanger, teaches method for image identification and comparison.

U.S. Pat. No. 6,310,971 to Shiiyama, teaches information processing method.

U.S. Pat. No. 6,246,804 to Sato, teaches image retrieval method using a compound image formed from a plurality of detected regions.

U.S. Pat. No. 6,400,853 to Shiiyama, teaches image retrieval method.

U.S. Pat. No. 6,373,979 to Wang, teaches a method for determining a level of similarity among more than one image and a segmented data structure for enabling such determination.

U.S. Pat. No. 6,345,274 to Zhu, teaches a method for subjective image content similarity-based retrieval.


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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL
October 6, 2003


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
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